ENERGY STAR® Water Cooler Program
Draft Product Specification
Version 2.0
April 19, 2000

The symbol for energy efficiency.

Below is the *draft* bottled water cooler specification *(Version 2.0)* for the ENERGY STAR® Water Cooler Program. In accordance with ENERGY STAR Program requirements, a product must meet all of the identified criteria to qualify as ENERGY STAR compliant by the manufacturer.

1) Definitions: Below is a brief description of a bottled water cooler and common energy consumption characteristics relevant to the ENERGY STAR Program.

A. Bottled Water Cooler: A free-standing device that dispenses water from removable 4- to 5-gallon plastic bottles commonly positioned on top of the unit.

B. Standby Energy Consumption: The required energy to maintain cold and/or hot water at appropriate dispensing temperatures.

> *EPA Comments: To achieve maximum energy savings without compromising product performance, this ENERGY STAR specification focuses on standby energy consumption. EPA tests revealed that standby losses account for the majority of bottled water cooler energy use. Reducing standby losses is a cost-effective and feasible option for achieving substantial energy savings.*
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> ***In Version 2.0, EPA made minor changes to product definitions. In Section 1, a) bottled units are now referred to as bottled water coolers, and b) the standby consumption definition was changed. In Section 2, the cold only category now specifically states inclusion of the cook and cold units.***

2) Qualifying Products: For the purposes of this Program, bottled water coolers include the following:

A. Cold Only and Cook and Cold Bottled Units: These units dispense either cold water only, or both cold and room-temperature water.

B. Hot and Cold Bottled Units: These units dispense both hot and cold water. Some units may have a third room-temperature tap. Units have an electric resistance heater and a refrigeration cycle.

> *EPA Comments: EPA's interest in developing energy efficiency guidelines for bottled water coolers is driven by the following considerations: 1) a large and stable installed product base; 2) evidence that standby losses account for a considerable portion of energy consumption; 3) the potential for more energy-efficient design based on engineering analysis and manufacturer feedback; and 4) low-cost options for reducing standby energy consumption.*
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> ***EPA is still considering developing a program for pressurized water coolers. However, EPA has insufficient information at this time to set a specification. EPA intends to discuss this issue further with industry at the May 16 Working Meeting.***

3) Efficiency Specifications for Qualifying Products: Only those products listed in Section 2 that meet the specifications outlined in Table 1 below may qualify as ENERGY STAR compliant.

Table 1
***Draft* Criteria for ENERGY STAR-compliant Bottled Water Coolers**
(Version 2.0)

Product Category	Energy Use Under Test Conditions
cold only and cook and cold bottled units	≤ 0.16 kW-hours/day
hot and cold bottled units	≤ 1.20 kW-hours/day

EPA Comments: Based on a technical review of existing products and discussions with manufacturers, EPA finds that the specifications listed above for water coolers are challenging, reasonable, and technology-neutral. EPA estimates that these specifications constitute an average reduction in standby energy consumption of roughly 30 percent for cold only bottled units and roughly 40 percent for hot and cold bottled units. EPA recognizes that no models currently on the market meet these proposed specifications. Testing conducted by and for EPA indicates the following:

- *Within the above categories, there is only a slight range in energy consumption among product models.*
- *Current designs have significant standby losses, which account for the majority of the product's energy consumption.*

Given the magnitude of standby losses and the small range in efficiencies among models, a specification based on currently available product models is not appropriate. EPA has identified several low-cost design options that could help manufacturers meet the proposed specification.

EPA received a comment that the energy use EPA metered for cold only bottled units might be lower than energy use measured by industry. This difference may be due to the fact that EPA tests were run at ambient temperatures well below the 90°F used in industry capacity tests. EPA is open to receiving further comments on this issue and to receiving additional data for metered units.

In draft Version 2.0, EPA adjusted the cold only and cook and cold unit specification from 0.13 kWh/day to 0.16 kWh/day. This adjustment is based on changes to EPA's testing procedure as described below. The specification 0.16 kWh/day still reflects an average reduction in standby consumption of 30%, which is consistent with draft Version 1.0.

4) Test Criteria: Test conditions are described below. Tests will focus on overall standby losses and water will not be withdrawn during the testing procedure.

a) Power Measurement: Energy use shall be measured as the total true power (kilowatt-hours) consumed in one 24-hour period.

b) Starting Conditions: Before starting the energy measurements, the unit should be at operating conditions, with water temperatures as defined in item (f) below.

c) Water Withdrawal: No water may be withdrawn from the unit during the test.

d) Timer Usage: If the unit has an integral, automatic timer, the timer can be set to turn off the unit for not more than 10 hours in the 24-hour test period. The unit must operate for the last 2 hours of the 24-hour test to ensure that it fully warms up or cools down after the shut-off period.

e) Ambient Temperature: Ambient air and water temperature must be $75^{o} \pm 2^{o}$F.

f) Dispensed Water Temperatures: Cold water temperature shall not exceed 50^{o}F and hot water temperature shall be at least 165^{o}F. These temperatures shall be measured before conducting the standby energy use test described in this specification when the respective function, compressor, or heating element turns on.

g) Cooler Location: The unit must be no more than 6 inches from a wall at least 7 feet high and extending horizontally at least 2 feet from each side of the unit.

h) Airflow: Airflow around the unit must be natural; no artificial means of increasing the airflow are permitted. Airflow created by components integral to the unit itself, such as internal fans, is permitted.

Manufacturers are invited to comment on the test method.

> *EPA Comment: EPA recognizes that the ambient temperature of 75°F is lower than the 90°F specified in industry capacity tests. The lower value was chosen to represent typical conditions.*
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> ***In Version 2.0, EPA made the following changes to the test procedure: a) cold water dispensed temperature increased from 49° F to 50° F, and b) ambient air and water temperature increased from 70° F to 75° F.***

5) Other Information: The *final* version of the ENERGY STAR water cooler specification will be provided in the standard Memorandum of Understanding (MOU) format (see EPA Comment below). In addition to product specifications, other issues will be addressed, including the following:

- Buyer Information: In keeping with the spirit of the ENERGY STAR Program, the Partner will be expected to ensure that consumers have a quick and easy method of determining which of its products are ENERGY STAR compliant. To achieve this goal, EPA recommends that the Partner place the ENERGY STAR logo on all qualified product models, their packaging, and product-related materials such as brochures, manuals, advertisements, and Web sites. Further, to educate consumers about energy efficiency and its benefits, the Partner will provide one or more of the following: a description of the ENERGY STAR Program, a discussion of the product's energy-saving characteristics, a description of the environmental benefits that result from the energy saved, and/or a description of potential energy bill savings. The Partner may determine the best manner to disseminate this information to customers.

- Effective Date: The date that manufacturers may begin to qualify products as ENERGY STAR compliant will be defined as the *effective date* of the MOU**. The effective date of the water cooler program is August 1, 2000**. This date is subject to negotiation with industry.

- Future Specification Revisions: EPA reserves the right to change the MOU requirements should technological and/or market changes affect the usefulness of those requirements to consumers, industry, or the environment. Revisions to the MOU are generally arrived at through industry discussions.

EPA Comments: To focus EPA/industry discussions on definitions and specifications ¾ the most crucial elements of the Program ¾ EPA has provided this brief draft specification rather than an MOU. However, the draft and final versions of the MOU will contain all of the standard sections of an ENERGY STAR MOU, including "Common Agreements and Principles," "Entry Into Force and Duration," "Use of the ENERGY STAR Logo and Name," and "Conflict Resolution." As noted above, the product specification, effective date, and duration of the MOU will be negotiated with industry. As always, EPA welcomes comments or alternative proposals from industry that address these issues. EPA deems industry feedback crucial to the successful development of ENERGY STAR Programs.

In Version 2.0, EPA proposed August 1, 2000 as the effective date for the water cooler program.